HANDBOOK OF PHONOLOGICAL DATA FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

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490 Lahu

490 01 p
[p/f][60]

490 02 p-aspirated
[p/f-aspirated][60]

490 03 b
[b/v][60]

490 04 t

490 05 t-aspirated

490 06 d

490 07 k

490 08 k-aspirated

490 09 g

490 10 q

490 11 q-aspirated
[q/x-uvular][61]
(free)

490 12 t/s-hacek[01]
[t/s][62]

490 13 t/s-hacek-aspirated[01]
[t/s-aspirated][62]

490 14 d/z-hacek[01]
[d/z][62]

490 15 f[30]

490 16 v[31]
[v-labialized][63]

490 17 s-hacek[01]
[s][62]

490 Lahu

18 gamma[31]

19 m
[m/v][60]
[m-syllabic/v][64]
(free)

20 n
[n-palatalized][02 65]

21 eng

22 l

23 glottal stop[32]

24 h

51 i[03 66]
(tag(-),free)
*/e/

52 e
*[i]
[iota]
(free)

53 e-mid[04]

54 i-bar[66]
(tag(+),free)
*/e-dot/
[z-approximant-syllabic][05 06 07 68]

55 e-dot[08]
*[i-bar]
[iota-bar]
(free)

490 Lahu

56 a
[a-nasalized][70]
(free)

57 u[09 66 71]
(tag(+),free,allo)
*/o/
[i-trema][10 72]
[i-trema-nasalized][73]

58 o[11]
*[u]
[upsilon][74]
(free)

59 o-open[12]
[o-open-nasalized][70]
(free)

60 yod[01 14]
[j-fricative][75]
[z][62]
[e-glide][76]

61 w[33]
(loan)
[o-glide][77]
[o-open-glide][78]

81 mid[35]

82 low[36]
[low-rising-long][79]

83 higher-mid-rising

84 high-falling

85 lower-mid-falling

490 $a Lahu $b Black $d Tibeto-Burman $e N Thailand $f 300,000 $g Merritt Ruhlen $g John Crothers (review)

490 $a Matisoff, James A. $b 1973 $c The Grammar of Lahu $f University of California Publications in Linguistics, No.75 $g Berkeley: University of California Press $q informants $r 2 years

490 $a **FREQUENCY OF SOUNDS** $A /a/ is the most frequent vowel in Lahu. /o-open/ is the second most frequnt vowel, and /e-mid/ is third. "In sum, the three low vowels enjoy the securest position in the Lahu vowel system.... The high vowels /u/ and /i-bar/ rank next in frequency, in that order.... The occurrence of /i/, next in frequency, is much more restricted... The mid vowels are in the shakiest position.... The weak sister of the entire system is /e-dot/." (p.14-15) "The mid-tone is lexically the most frequent.... The high-falling tone is next in frequency.... Third in frequency is the low-falling tone.... The least frequent of the tones which descend from original non-checked syllables is the very-low tone." (p.23)

490 $a **INTONATION** $A "We recognize two junctures, both of which must be defined in grammatical terms: sentence-pause and comma-pause. Sentence-pause is realized as a potential cessation of phonation of somewhat longer duration than comma-pause, optionally preceded by a prolongation of the vowel of the last precdding syllable, if it is non-checked. This juncture is not necessarily associated with any particular intonational contour, pitch or stress. It occurs only in sentence-final position. Comma-pause is realized as a brief cessation of phonation perhaps one mora long, optionally preceded by a prolongation of an immediately preceding open vowel. It occurs optionally in several environments.... Comma-pause may not occur within a

single NP or VP, or sentence-final.... The presence or absence of comma-pause is often of prime importance in distinguishing pairs of utterances that are different in meaning but otherwise phonologically identical." (p.36)

490 $a **MARGINAL SPEECH SOUNDS** $A "In jocular, emotional, or angry speech, the palatal affricates are occasionally pronounced like alveolar affricates.... Many interjections have special features of vowel prolongation and exaggerated tone that lead us to write them conventionally with non-canonical double vowels.... Aside from interjections, the only morpheme of non-canonical phonological shape that we must recognize is an imperative verb-particle of the shape /glottal stop/, which occurs only after verbs in non-checked tones. It is obvious that this abrupt glottal offset is a suprasegmental phenomenon, unlike the true verb particles. Yet it does carry a meaning and is not to be identified with either of the checked tones, since it occurs after verbs in any open tone.... For dramatic effect a syllable is sometimes pronounced with unusually high pitch, which for male speakers may mean lapsing into falsetto.... In humorous or emotional conversation, in cantatory style, and especially in women's speech, a special triple-contoured intonation is often encountered. Starting with the high-falling contour, it rapidly descends to the very-low tone, whence it rises again to the mid range.... In rapid colloquial speech the dropping of initial consonants is widespread in high frequency words like particles and adverbs." (p.37-38)

490 $a **NASALIZED VOWELS** $A "Syllables with nasalized vowels are marginal to Lahu phonology. The nasalization has systematic status only in loanwords from Shan, Burmese, or Thai, where the donor language has -m, -n, -eng, or a nasalized vowel.... The nasalization is always optional, retained only in the more careful speech of people who have a fair knowledge of the donor language. Occasionally the nasalized variant is favored to avoid confusion with a homophonous native word in a certain context." (No inventory of nasalized vowels is given, so these loan segments have been omitted from the Archive inventory. Examples cited are nasalized /i, a, u, o/. See p.20.) In all other cases the nasalization is conditioned by the initial consonant, and is subphonemic. We have seen that /m.u/ is realized as [m/v.i-trema-nasalized] . More interesting is the optional nasalization that occurs (even in native syllables) with the vowels /a/ or /o-open/, where the initial is /h/ or zero.... This is strikingly similar to the situation in Central Thai, in Lao, in Lisu, and indeed in RP British English.... It seems obvious that the widely observed connection between laryngeal opening and nasalization is grounded in universal articulatory fact." (p.20-21)

490 $a **STRESS** $A "The vast majority of Lahu syllables receive sufficient stress so that their tonal contours do not significantly change regardless of the syntactic position of the syllable in the sentence. Completely stressless, and therefore toneless, syllables are excessively rare. The only examples are to be found in the speech of some fastidious speakers in a few recent loanwords from Burmese, Shan, or Thai.... A few native functor-morphemes do have reduced stress, however, to the point where their tones are affected. The negative adverbs 'm.a.high-falling' 'not' and 't-aspirated.a.high-falling' 'do not' are often treated this way in rapid speech, so that their tones are truncated and lose the final drop in pitch. This stress reduction is sometimes even marginally contrastive.... The only other syllable which typically has reduced stress is the noun-prefix /o-open/ with low-falling tone." (p.34-35)

490 $a **SYLLABLE** $A (C)(w)V(G)(glottal stop) $A /glottal stop/ is analyzed in the Archive as a consonant, rather than as a tonal feature, as done by Matisoff.

490 $a **TONE** $A domain of tone: syllable $A "Every stressed syllable has a tone. Standard Lahu has five open (non-checked) tones, and two checked tones." (p.21) The latter two are regarded in the Archive analysis as combinations of /high-falling/ and /lower-mid-falling/ with syllable final /glottal stop/. [JHC] "The Lahu tones do not exhibit any strictly automatic, phonologically conditioned sandhi behavior.... All 49 mathematically possible two-syllable tonal sequences freely occur in close juncture." (p.27) For the historical origin of the Lahu tones, see pages 21-27.

490 01 $A "The five palatal initials are all pronounced rather fronted." (p.5)

490 02 $A [n-palatalized] could simply be a palatal. Source unclear.

490 03 $A "/i/ is a high front unrounded vowel with a tense quality much like French [i]." (p.11)

490 04 $A "Lahu /e-mid/...is higher than the English vowel in 'bed.'" (p.10)

490 05 $A It is not clear whether there is a vocalic tongue position superimposed on the alveolar fricative (palatalization or velarization) or whether [z-approximant-syllabic] is simply a syllabic fricative with no vocalic characteristics other than syllabicity. [JHC]

490 06 $A [z-approximant-syllabic] "is either voiced throughout...or else first unvoiced then gradually voiced." (p.7)

490 07 $A "It is as if these syllables [with [z-approximant-syllabic]] had no vowel at all, but rather consisted merely of a prolonged hissed spirant." (p.7)

490 08 $A [e-dot, iota-bar] have "slight lip-rounding." (p.11)

490 09 $A /u/ is "moderately rounded." (p.12)

490 10 $A [i-trema] is "pronounced with extreme sideways spreading of the lips." (p.12)

490 11 $A "/o/ is...pronounced with greater lip rounding than /u/."

490 12 $A /o-open/ is "a low back slightly rounded vowel...quite close to the vowel of German 'Kopf.'" (p.12)

490 14 $A "/yod/ patterns synchronically as a spirant, not a semivowel." (p.5)

490 30 $A "There are a few morphemes in which /f/ freely varies with /p/ or /p-aspirated/." (p.4)

490 31 $A "There is a certain amount of interplay between /gamma/ and the labial spirant /v/. Occasionally one finds doublets [with the two sounds in free variation]." (p.9)

490 32 $A /glottal stop/ occurs rarely in phrase-initial position as free variant of simple vowel onset. In syllable final position Matisoff analyzes it as a feature of the "high-checked" and "low-checked" tones. See note on tone, and p.9-10, 25-26, 38.

490 33 $A "The labial phoneme /w/ occurs syllable-initially in a handful of words, all of foreign (usually Shan) origin." (p.5) It also occurs as the first element of rising diphthongs, mostly in loanwords from Burmese, Shan, or Thai. (p.19)

490 35 $A /mid/ tone is lexically the most frequent. (p.23)

490 36 $A /low/ is the rarest tone lexically. Often applied to new loan words. (p.21)

490 60 $A "/p, p-aspirated, b, m/ are all affricated before /u/." (p.3) (Note that after /p, p-aspirated, b, m/ /u/ is realized as [i-trema]. (p.3))

490 61 $A "In rapid or emphatic speech /q-aspirated/ is sometimes affricated to [q/x-uvular]." (p.9)

490 62 $A The affricates and /s-hacek/ are fronted before /i-bar/, /yod/ is realized as [z]; the palatals may also be replaced under special conditions.

490 63 $A "/v/ is realized with a labial glide, [v-labialized], before the central vowels /i-bar, schwa/." (p.4)

490 64 $A "With some speakers...the vowel of /m.u/ is often swallowed up entirely, yielding a kind of syllabic nasal affricate pronounced with extreme lip-spreading, [m-syllabic/v]." (p.3-4)

490 65 $A "The nasal /n/ is palatalized to [n-palatalized] before /i/." (p.5)

490 66 $A "The mid-row vowels /e, e-dot, o/...are often in free variation with /i, i-bar, u/ especially after labial and velar initials." (p.10)

490 68 $A "/i-bar/, which is [i-bar] in all other environments, has an especially high allophone [z-approximant-syllabic] after the palatals" (which are actually alveolars in this environment--JHC). (p.6)

490 70 $A /a/ and /o-open/ are optionally nasalized in initial position or after /h/. (p.21)

490 71 $A /o/ is realized as [u] after /p-aspirated/. There is no merger of /o/ and /u/ here because in the same context /u/ is unrounded, with affrication of /p-aspirated/. See p.13.

490 72 $A "/u/...is unrounded and slightly lower and fronter after the labials /p, p-aspirated, b, m/." (p.12)

490 73 $A "After /m/ the /u/ is not only unrounded, but nasalized as well, [i-trema-nasalized]." (p.3)

490 74 $A "/o/ is a mid-to-high back vowel...having some very high allophones in the u-range." (p.12)

490 75 $A "/yod/...has local friction before the high front vowels /i, e/, where it is realized as a slit spirant, the voiced homologue of German ich-laut." (p.5)

490 76 $A Following [a] in the diphthong /a/yod/ the second element is a semivowel intermediate in height between [e] and [i]. (p.15)

490 77 $A /w/ is realized as [o-glide] before /e/. (p.19)

490 78 $A /w/ is realized as [o-open-glide] before /e-mid, a/. (p.19)

490 79 $A "Over a syllable occurring in isolation, or before comma- or sentence-pause, the low level tone is often realized with a slight upward curl at the end, and the whole syllable is prolonged in duration.... This curl is useful in distinguishing the low level tone from the

tonetically quite similar low-falling tone. In rapid speech it is difficult to tell the two apart in the Huey Tad dialect." (p.21)